

ANNUAL BOTANY / NATURAL AREA REPORT FISCAL YEAR 2002

Prineville District
Bureau of Land Management

STAFFING

Ron Halvorson (NRS-PFT), JoAnne Armson (NRT-PFT), Gail Smith (Biotech Intermittent) and Rick Demmer (NRS-Term)

Ron spends about half his time in botany, as district botanist, and the other half in budget, as district budget analyst. He gets to get out in the field during the spring and summer, at least a little.

JoAnne spends three to four months doing pure botany work. The rest of her time is spent working on Rangeland Standards and Guides, administering the Deschutes Resource Area forestry program and helping out in the recreation program when/wherever needed. She is in high demand.

Gail has cut back her time to just a couple days a week during the field season doing survey and monitoring. She also devotes time in the off-season keeping files organized and working with the District herbarium.

You may have noticed the addition of Rick Demmer to our staff list. Rick, by training, is a herpetologist who came to our district a number of years ago to work in the riparian program. In reality, Rick is interested in everything living, and over the years his function has changed with the District's needs. He's even worked as a surface protection specialist! Currently, in his spare time, he is nourishing a 10-year fascination with lichens, those tiny, little plant wannabees found on the soil and on other precarious surfaces, and has become the District's "expert". With the Bureau's emerging interest in lichens and other biotic crust as an integral part of our rangeland ecosystems, Rick now has a collection of nearly 200 species ready for the herbarium. He's also established over a dozen long-term monitoring studies designed to detect changes in the soil crust communities within selected livestock grazing allotments. This latter effort is in support of our John Day River Plan. While Rick is not "officially" part of the botanical "staff" and his crust work is not the main part of his job in the Central Oregon Resource Area, he is filling a critical botanical role in the district.



MAJOR WORKLOAD/ACCOMPLISHMENTS

A. INVENTORY/NEW POPULATIONS FOUND

Through project clearance, monitoring and/or other work, nine new populations of special status plants were found. This includes one population each of *Artemisia ludoviciana* ssp. *estesii*, *Astragalus peckii*, *Calochortus longebarbatus* var. *peckii*, *Lomatium farinosum* var. *hamblenieae* and *Thelypodium eucosmum*. Two populations were found of both *Castilleja chlorotica* and *Carex hystericina*.

Inventory of a small parcel of Public Land along the

Middle Deschutes River, only a mile or so upstream from the Eagle Crest resort, resulted in a new location for *Artemisia ludoviciana* ssp. *estesii*, commonly called Estes' wormwood (ONHP List 1). It was not surprising to find the plant here as it is found scattered all along the Deschutes River in this portion of Central Oregon. No threats or other disturbances were noted.

Survey work for a transmission line upgrade west of

Redmond turned up the new population of *Astragalus peckii*, a species listed as Threatened in Oregon. Covering nearly five acres, this new site is the most northern we have documented, but as always, in sandy, pumice soils dominated by western juniper, shrubs and grasses.

Two populations of *Castilleja chlorotica* were discovered while doing inventory for juniper thinning projects in the West Butte area, a portion of the district known to support this plant. The green-tinged paintbrush, on ONHP List 1, should not be negatively affected by juniper thinning, although post-thinning monitoring will be required. Any follow-up treatment with prescribed fire, however, would give cause for concern as fire would remove the native shrubs, a critical component of the species' habitat. Therefore, prescribed fire is discouraged in *Castilleja chlorotica* habitat.

Two additional populations of porcupine sedge, *Carex hystericina*, were discovered on Sutton Mountain in the Black Canyon area. On ONHP List 2, this species occurs infrequently in the Prineville District, occupying wet, generally undisturbed, riparian areas. No disturbances or concerns were noted.

One new location for *Calochortus longebarbatus* var.

B. MONITORING

A total of 49 special status plant populations were monitored in 2002. These included *Artemisia ludoviciana* ssp. *estesii* (1), *Astragalus diaphanus* var. *diurnus* (13), *Astragalus tyghensis* (8), *Botrychium pumicola* (1), *Castilleja chlorotica* (2), *Calochortus longebarbatus* var. *peckii* (6), *Carex hystericina*, (2), *Lomatium farinosum* var. *hamblenieae* (3), *Lomatium ochocense* (1), *Mimulus jungermannioides* (1), *Ranunculus reconditis* (1) and *Thelypodium eucosmum* (10).

The population of *Artemisia ludoviciana* ssp. *estesii* (Estes' wormwood) monitored last year near Steelhead Falls still apparently had some trespass horses on it early in the season. Nonetheless the vegetation seemed to have recovered nicely and more wormwood plants were identifiable this year than in 2001.

The *Astragalus diaphanus* var. *diurnus* (transparent

peckii, Peck's long-bearded mariposa lily, was found at a location near a known population in the Big Summit Prairie area, but at a site not documented. As this area is separated from the earlier known population by a couple of highly-developed roads, for future monitoring purposes it makes sense to keep this identified as a separate population. As reproduction of this species is vegetative, there really isn't a pollination issue to consider. This species is a candidate for state listing.

Another population of Hamblen's lomatium, *Lomatium farinosum* var. *hamblenieae*, was discovered in the Criterion area where other populations have been found as well. This species is on the ONHP List 2 and tends to occupy the rocky, shallow swales within biscuit scabland.

Finally, another population of arrow-leaf thelypody, *Thelypodium eucosmum*, a plant listed as Threatened in Oregon, was documented in the Sutton Mountain area. This population was actually reported by the adjacent landowner who has an intense interest in the area and its flora. Typical of most *Thelypodium eucosmum* populations, it was found in a steep, isolated, somewhat inaccessible drainage, at least inaccessible to those four-legged critters who would like to eat this palatable plant.

milkvetch) populations are all located within the corridor of the South Fork John Day Wild and Scenic River. Once again we experienced a very dry year with above normal temperatures early in the season. As a result, some populations had no above ground plants at all while others had a predominance of second year plants. At one location the bright red, mature fruits averaged 60 per plant, with some plants having over 100! They are truly a sight to behold. Where there were plants, both first and second year plants were found although 90% of the plants were often second year. A population that historically had some livestock and wildlife trailing though it had none this



Astragalus diaphanus v. *diaphanus*

year. Another population, though, is at risk from trampling/trailing by wild horses associated with the Murderer's Creek Wild Horse Management Area. This is a situation that will have to be closely watched.

Despite the dry year, monitored populations of *Astragalus tyghensis* (Tygh Valley milkvetch) seemed to be flourishing. The population that has been weeded for diffuse knapweed for several years was weeded once again. The hundreds of knapweed plants decreased to less than 100 in 2001 and this year only 59 plants were found and pulled. We're winning! The population in the Criterion area, which was inadvertently sprayed in 1998, now has 11 plants out of an original 23, an increase of two from last year. Other populations monitored appeared fairly vigorous, despite occasional OHV use.

Only one *Botrychium pumicola* (pumice grape fern) population was monitored this year, and no plants were found. Beginning in 2003, the focus of our *Botrychium pumicola* monitoring will be to monitor all known populations at least once each year through 2005. Because the grape fern is so variable in its emergence and response to weather, monitoring only once every two to three years may not be giving us a true picture of its status. For whatever reason we seem to have less numbers of this plant than we did in the 1990s, in spite of protection.

Calochortus longebarbatus var. *peckii* (Peck's long-bearded mariposa lily) continues to be affected by our drought. Except for one population where someone dug out a spring and likely changed the hydrology of a site, no particular disturbances were noted. We continue to observe less flowering *Calochortus* within our exclosures (established ca. 1985) than we see outside. There is some speculation that exclusion of *Calochortus* from livestock grazing allows other plants to build up a mat on the soil surface, which eventually excludes *Calochortus*. The rationale is that fire was once necessary to keep this mat in check but now with the exclusion of fire, livestock grazing serves a similar purpose. Of course, the timing of grazing is important as use during the active growing period of *Calochortus* is likely detrimental.

Two populations of *Carex hystericina* (porcupine sedge) were monitored. While no human-caused threats were noted, observation indicates that the wetted area of the riparian zone is less than in past

years; likely the result of the ongoing drought, and therefore the area occupied by the sedge is reduced.

Two burned populations of *Castilleja chlorotica* (green-tinged paintbrush) were monitored this year: one in the area burned inadvertently 3 years ago, near Horse Ridge, and one burned in the Skeleton Fire a number of years ago. Two new plants were observed in the burned portion of the Horse Ridge population, along with some new shrubs, but no plants were found in the Skeleton population. This was a poor year for *Castilleja chlorotica* by any account. Many of the plants that flowered failed to set seed, due to the dry conditions, and many

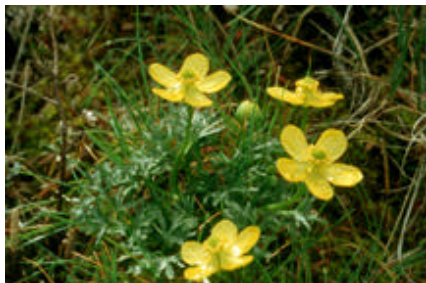


plants didn't flower at all.

Three populations of *Lomatium farinosum* var. *hamblenieae* (Hamblen's lomatium) were observed in the Criterion area. Two of the populations are located within areas of heavy livestock concentration early in the spring: one adjacent to a reservoir and another adjacent to a small natural depression that holds water for a time. In both cases the plants are subject to heavy trampling. When the rocky clay soil is wet, hooves will actually create small "craters" five to ten centimeters deep. If there happens to be a Hamblen's lomatium under foot, it has an instant home at the bottom of a hole. Surprisingly, perhaps because of its sturdy root structure, these plants seem to thrive under these circumstances. The early grazing that causes this, while hard on the soils adjacent to water sources, is a good strategy for protection of the *Astragalus tyghensis* found in the allotment.

The population of *Lomatium ochocense* (Ochoco biscuitroot) having a long-term *quantitative* study was qualitatively monitored in 2001. No disturbances were noted and none are expected, given the rocky habitat and the fact that all are within the North Fork WSA. Most of the effort was given to relocation of the permanent quadrat markers and further documentation of their location so data can again be collected from this population in the near future. As a result of the ongoing drought, it appeared that a relatively small percentage of the biscuitroot produced viable fruit.

One population of *Mimulus jungermannioides* (hepatic monkeyflower) was monitored in 2002. This population was discovered in 2001 adjacent to the Steelhead Falls trail, a popular hiking trail along the Middle Deschutes River near Crooked River Ranch. No disturbances were noted or would be expected as this little plant's habitat is 100% vertical basalt.



Ranunculus reconditis

Our only population of *Ranunculus reconditis* (Dalles Mtn. buttercup) was once again visited on Mill Creek Ridge. As this is the

only known population in federal ownership, we visit it at least annually. The timing was perfect this year (April 11) with 90% of the plants capable of flowering

actually in flower. As the plants were so obvious, special attention was paid to locating the extent of the population. It is now mapped to encompass a distance of over one-eighth mile along the ridge.

Finally, 10 populations of *Thelypodium eucosmum* were visited. The biggest story was, once again, the weather. Most populations showed signs of drought: smaller population size in both area occupied and numbers, fewer first year plants, smaller plants, and in some cases, no plants at all. One population was found to have an early infestation of Russian knapweed and measures are being taken to control this pest. Another population on Sutton Mountain, burned either by wildfire or through prescribed burning in 2001 (both occurred), was extremely vigorous. This observation, coupled with a similar observation of a population near John Day, substantiates that fire is probably beneficial to *Thelypodium eucosmum*. Of course, monitoring of these burned populations will continue for a few more years.

C. CLEARANCES

A total of 11 field clearances were completed encompassing 8,858 acres. Types of projects included hazardous fuels reduction projects (8,676 acres), rights-of-way (102 acres) and livestock water developments (80 acres). *Astragalus peckii* was found along a proposed transmission line upgrade route. The species appears to tolerate some degree of disturbance and so project requirements were simply that the power company vehicles minimize any off-road travel in this area of Peck's milkvetch. *Castilleja chlorotica* was found both in proposed juniper reduction projects and along a proposed livestock water pipeline. The juniper projects were allowed to continue provided prescribed fire would not be proposed for this area. Fire would eliminate sagebrush, a critical habitat component for *Castilleja*, as there apparently is a fungal relationship between the two. The livestock water

pipeline was approved provided the project stayed within an existing vehicle route traversing the paintbrush habitat.

Various botanical waivers were issued, primarily for minor rights-of-way, recreation projects in developed campgrounds, hazardous fuels treatment projects in known habitat and other projects in areas previously disturbed or which would likely result in no impact to botanical resources. In some cases where special status plants were likely to occur in fuels treatment projects but that there were likely to be no adverse effects, the project was given a "go ahead" with stipulations that post-treatment monitoring of the special status plants would be initiated in 2003.

Geo-area statistics are found on page 7.

OTHER ACCOMPLISHMENTS

A. NATURAL AREA MANAGEMENT

Benjamin ACEC/RNA was visited twice this year and the fence inspected/maintained as needed. The natural area remains excluded from livestock

grazing. As reported last year, a five-acre wildfire burned in the area in FY 2001 and, unfortunately, was extinguished by engine crews who drove into

the area cross-country. Examination of the site in FY 2002 indicated the vehicle tracks are non-apparent and there was no long-term disturbance to the area through suppression efforts. Native species, especially Idaho fescue, appear to be recovering at an acceptable rate, and no new disturbances were noted. No noxious weeds are on site.

Forest Creeks ACEC/RNA was visited once and no disturbances/concerns were noted. The area is generally excluded from livestock grazing by its topography.

Horse Ridge ACEC/RNA was visited at least twice by the "botanical" staff, was overflowed by the wilderness staff (it is a WSA "Instant Study Area") and visited two or three times by the recreation staff. The perimeter fence was inspected and maintained as necessary and its exact location determined through GPS. It appears the actual fenced portion of the RNA is smaller than the land area designated, although this is not a big issue. In most cases the fence is probably 30 meters or so inside the actual RNA boundary, except for one area where the fence was built along a ridge instead of across a canyon where the actual boundary is. We've known about the latter deviation prior to the GPS effort. The growing network of mountain bike trails within the RNA was GPS'd as well.

The issue of mountain bike use in the RNA came to a head when it was discovered that local groups were actually publishing maps of user-created trails in the Horse Ridge area, some of which went through the RNA. Our recreation staff met with these folks to try to get them to stay out of the RNA and we signed the perimeter fence (actually in FY 2003). Signs were posted only at areas where mountain bikers were known to cross the fence or other areas likely to be crossed. Latest reports are that trails are now being user-created outside the RNA so we may be making some headway. The Horse Ridge area (more than just the RNA) is popular in the winter when the trails in the high country are under snow. We'll continue to monitor this.

B. CHALLENGE COST SHARE / COOPERATIVE EFFORTS / OUTREACH

Two challenge cost share projects were funded during FY 2002: the fifth year of a projected five-year study to determine the effects of various disturbances on *Botrychium pumicola*, a species endemic to the lodgepole pine pumice zone near La Pine, and the first year of a similar study of *Astragalus peckii*, a species endemic to the area between Bend and Sisters, and in locations near Chemult.

Gail led another "plant walk" in support of Prineville Reservoir State Park's third annual "Star Party". This is an

The **Powell Butte ACEC/RNA** was visited once and no immediate disturbances/concerns were noted.

The southern boundary (against private land) has



Powell Butte ACEC/RNA

been surveyed by a private surveyor in anticipation of some sort of recreational/ranch subdivision. These private lands have also been identified through county

planning as being suitable for a destination resort development. If either of these scenarios came to pass there could be serious consequences to the defensibility of the RNA. The area is not fenced.

The Island ACEC/RNA was visited twice by BLM personnel in FY 2002: once to lead a "Becoming an Outdoor Woman" field trip (sponsored by ODF&W), and once to pull medusahead, a noxious, introduced annual grass. We now have nearly 40 discrete, GPS'd, medusahead sites, all of which are small infestations. Many of the sites had no medusahead in 2002 and we might be getting ahead of it.

The permit system devised by the interagency (BLM, FS and OPRD) management group and administered by OPRD continues to work well, with visitors to The Island hovering around 50 per year (down from a high of 564 in FY 1996). Groups mostly consist of conservation organizations (legitimate field trips) and outdoor classes, for example, those sponsored through Central Oregon Community College and the High Desert Museum.

The area appears to be doing well, although needing some natural fire. Despite the drought, many of the native species, especially the bunchgrasses, did reasonably well this year. We are still awaiting designation of this area as a National Natural Landmark by the National Park Service.

“extra curricular” event to help broaden participants’ knowledge of the natural world. “Don’t worry,” Gail was told, “there will only be four or five people on the hike.” She had nearly 20.

Ron gave a presentation about the District’s botany program and some of the local flora to a Prineville garden club, the “Sage Hens and Grouzers”. The group was quite interested and most easily related the photos of the native species to the various cultivated relatives they spend time with.

C. SEEDS OF SUCCESS AND NATIVE PLANT RESTORATION

The Seeds of Success program, whereby BLM has made a commitment to collect seeds from a myriad of species across the nation, to be sent to the Royal Gardens in Kew, England, got off to a slow start in Prineville. While we only had to collect five species in 2002, by the time we knew what was expected, much of the season had passed. Couple that with the current drought and we were only able to collect seed from one taxon. But it was a great collection. Despite the drought, 2002 seemed to be a banner year for some species, especially *Calochortus macrocarpus*, the big-pod mariposa lily. JoAnne located a vigorous population in the Lower Bridge area, NW of Redmond, and made a fine collection. FY 2003 should be better as we will start the season knowing what we need to do. Additionally, Berta Youtie has been hired by Oregon/Washington BLM to coordinate this effort on the East Side. Berta brings a wealth of experience as a long-time preserve manager with The Nature Conservancy.

D. OTHER PROGRAM SUPPORT

Botanical input continued to be provided to all resource management programs as needed, especially as related to the lands and hazardous fuel reduction programs. Time was spent assisting in PFC (proper functioning condition) analyses as well as with Rangeland Standards and Guides evaluations. There was also involvement in several plans, most notably the Upper Deschutes RMP/EIS. JoAnne and Rick have both been assigned to participate in our Rangeland Standards and Guides evaluation process and it remains to be seen how this will work out as far as the rest of the botany program is concerned.

E. OTHER ITEMS OF INTEREST

JoAnne attended BLM’s monitoring course in Boise and the microbiotic crust workshop in Burns. Ron participated in the Native Plant Production/Restoration workshop in Eugene.



GEO-AREA STATISTICS

High Desert

3 new populations found (*Calochortus longebarbatus* var. *peckii* – 1; *Castilleja chlorotica* - 2)

9 populations monitored (*Calochortus longebarbatus* var. *peckii* - 6; *Castilleja chlorotica* - 2; *Lomatium ochocense* - 1)

9 botanical waivers (fuels treatments, fence reconstruction, minor highway ROW adjustment, oil and gas lease)

8,276 acres botanical clearance (fuels treatments, livestock pipelines)

Lower Deschutes

1 new population found (*Lomatium farinosum* var. *hambleniae*)

12 populations monitored (*Astragalus tyghensis* - 8; *Lomatium farinosum* var. *hambleniae* - 3; *Ranunculus reconditis* – 1)

2 botanical waivers (riparian fence and campground improvements)

Lower John Day

3 new populations found (*Carex hystericina* – 2; *Thelypodium eucosmum* - 1)

12 populations monitored (*Carex hystericina* – 2; *Thelypodium eucosmum* - 10)

1 botanical waiver (fence)

Upper Deschutes

2 new populations found (*Artemisia ludoviciana* ssp. *estesii* – 1; *Astragalus peckii* - 1)

3 populations monitored (*Artemisia ludoviciana* ssp. *estesii* - 1; *Botrychium pumicola* – 1; *Mimulus jungermannioides* - 1)

7 botanical waivers (minor rights-of-way, fence construction, military training, recreation use permit, fuels reduction treatment)

422 acres botanical clearance (rights-of-way, fuel treatment)

Upper John Day

11 populations monitored (*Astragalus diaphanus* var. *diurnus* - 8; *Thelypodium eucosmum* - 3)

4 botanical waivers (fuels treatments and communication site)

160 acres botanical clearance (fuels treatment)